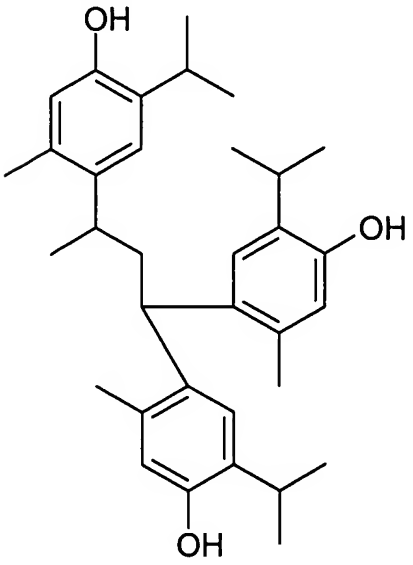
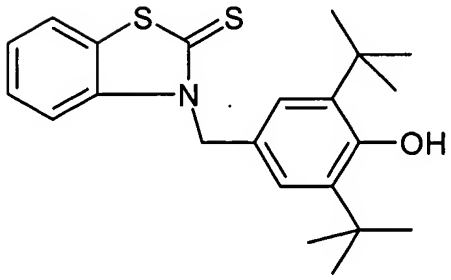
In the Claims

1. **(original)** Method of coloring a polymeric material, wherein a polymeric material containing
   a) a phenolic antioxidant and/or a phenolic ultraviolet absorber and
   b) a colour former

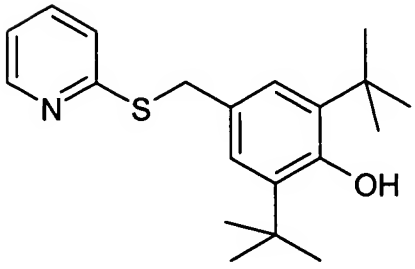
is irradiated using a radiation of higher energy than visible light, provided that the phenolic antioxidant and/or phenolic ultraviolet absorber (a) is not a compound of the formula (2) to (14)



(2)



(3)



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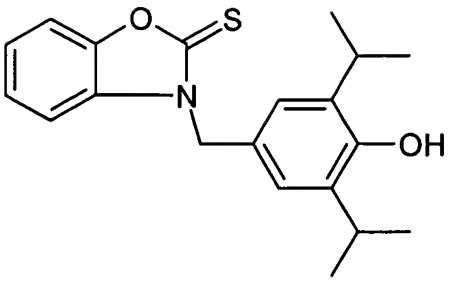

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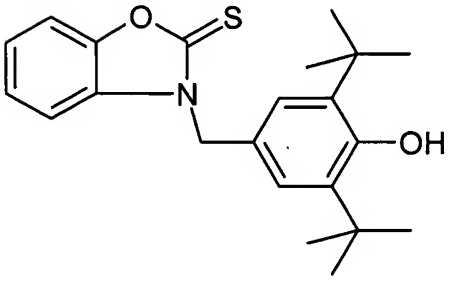

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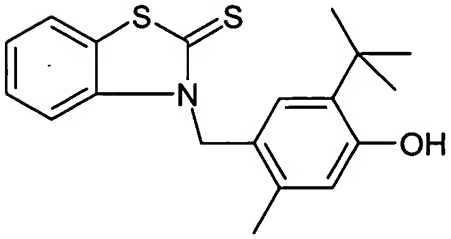

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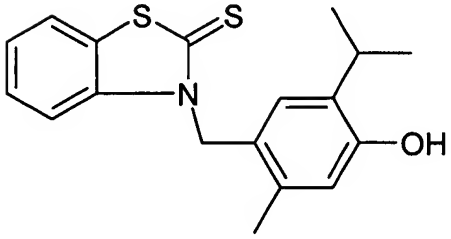

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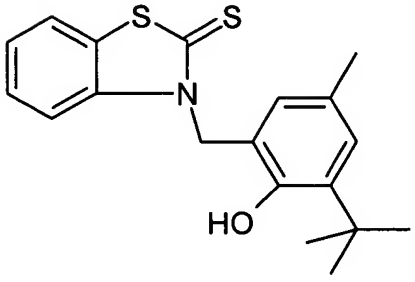

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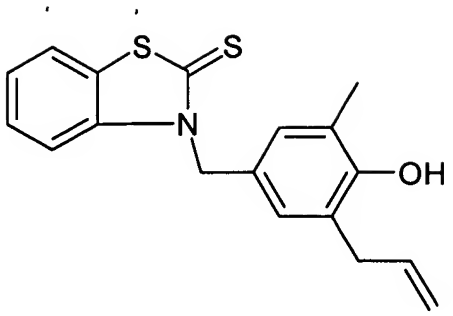

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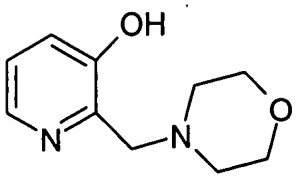

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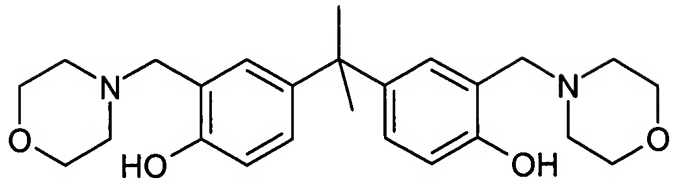

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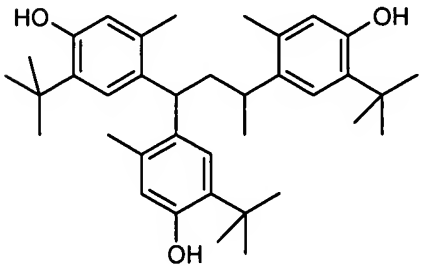

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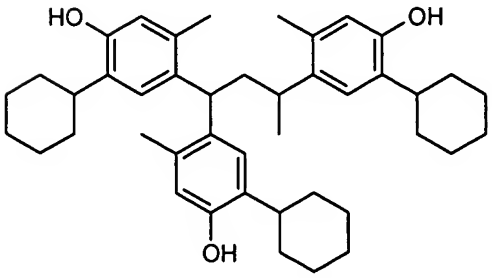


(14).

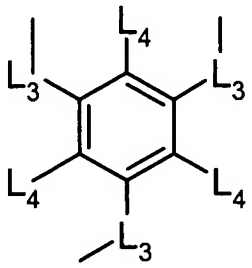
2. (currently amended) Method according to claim **1**, wherein the radiation of higher energy than visible light is selected from ultraviolet light, X-ray, gamma radiation and particle radiation**[[,]]**

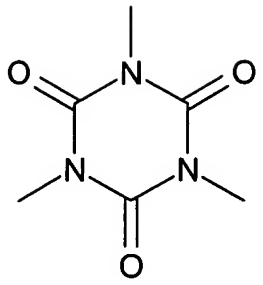
~~especially from ultraviolet laser or ultraviolet lamp radiation of 285 to 400 nm, electron radiation, X-ray and gamma radiation~~.

3. (currently amended) Method according to claim **1**, wherein component (a) is a compound comprising one or more mono-hydroxyphenyl moieties, each carrying one or two bonds to either a linking group connecting the moiety with 1 to 3 further moieties of the same type or to an anchor group,
and optionally 1-3 further substituents selected from alkyl of 1 to 12 carbon atoms,
where the linking groups are di-, tri- or tetravalent aliphatic groups of 1 to 20 carbon atoms and

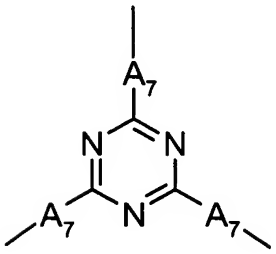
divalent linking groups are selected from
alkylene which may be interrupted and/or end-capped with -O-, -NH-, -S-, -CO-, -COO-, -OCO-, -NHCO-, -CONH-, a group L_1, phenylene**[[,]]** or phenylene which is substituted by C_1-C_{12}alkyl and/or C_1-C_{12}alkoxy and/or C_2-C_{12}alkanoyloxy and/or C_3-C_{12}alkenoyloxy;
divalent mono-, di- or tricycloalkylene groups; divalent mono-, di- or tricycloalkylene groups interrupted by -O-; ~~spacer groups~~ -O-; -NH-; -S-; -CO-; -COO-; -OCO-; -NHCO-; and -CONH-;

trivalent groups are selected from
trivalent alkyl groups of 3 to 20 carbon atoms; said trivalent alkyl groups interrupted and/or end-capped with -O-, -NH-, -S-, -CO-, -COO-, -OCO-, -NHCO-, -CONH-, a group L_1, phenylene**[[,]]** or phenylene which is substituted by C_1-C_{12}alkyl and/or C_1-C_{12}alkoxy and/or C_2-C_{12}alkanoyloxy and/or C_3-C_{12}alkenoyloxy; and~~or~~ trivalent groups of the formulae





or



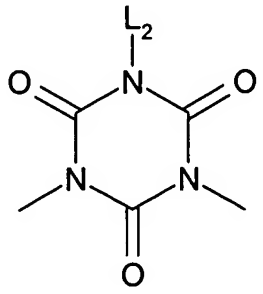
;

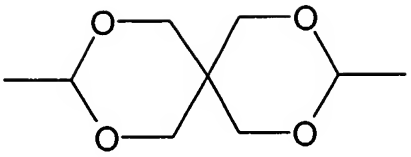
tetravalent groups are selected from

tetravalent alkyl groups of 4 to 20 carbon atoms; and said tetravalent alkyl groups interrupted and/or end-capped with -O-, -NH-, -S-, -CO-, -COO-, -OCO-, -NHCO-, -CONH-, a group L_1, phenylene**[[,]]** or phenylene which is substituted by C_1-C_{12}alkyl and/or C_1-C_{12}alkoxy and/or C_2-C_{12}alkanoyloxy and/or C_3-C_{12}alkenoyloxy;

wherein

L_1 is a group selected from the formulae





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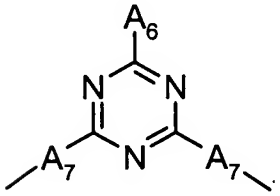


;

L_2 is OH, C_1-C_{12}alkyl, C_1-C_{12}alkoxy, C_2-C_{12}hydroxyalkyl; or C_2-C_{12}hydroxyalkoxy;

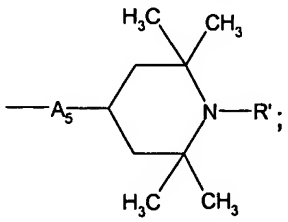
L_3 independently are C_1-C_4alkylene;

L_4 independently are H or C_1-C_4alkyl; and

anchor groups are selected from

C_1-C_{22}alkyl; C_1-C_{22}alkyl-A_5-; C_2-C_{22}alkyl interrupted by -A_5-; -A_4-phenyl; -A_4-phenyl where the phenyl core is substituted by C_1-C_{12}alkyl, C_1-C_{12}alkoxy, C_2-C_{12}alkanoyloxy and/or C_3-C_{12}alkenoyloxy;

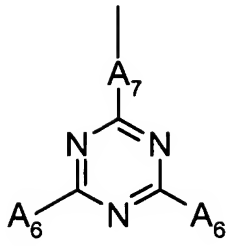
C_1-C_8alkyl substituted by a group of the formula



and phosphite, phosphate or phosphonate ester groups[[, e.g.]] of the formula

$$-A_3-(O)_m-P(=O)_p(OA_1)(OA_2);$$

or the anchor group is of the formula



where m and p independently are 0 or 1;

A_1 and A_2 independently are C_1-C_{12}alkyl or phenyl or phenyl substituted by C_1-C_{12}alkyl or an equivalent of an alkaline, alkaline earth or aluminum atom;

A_3 is a direct bond or C_1-C_8alkylene;

A_4 is selected from C_1-C_8alkylene and A_5;

A_5 is selected from -O-, -NH-, -S-, -CO-, -COO-, -OCO-, -NHCO-**[[,]]** and -CONH-;

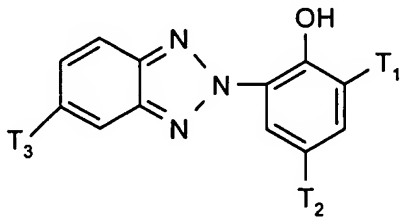
A_6 is selected from C_1-C_{18}alkoxy, C_1-C_{18}alkylthio and C_1-C_{18}alkylamino;

A_7 is -O- or –NH-;

R' is H, C_1-C_{18}alkyl, C_1-C_{18}alkoxy or cyclohexyloxy**[[:]]**;

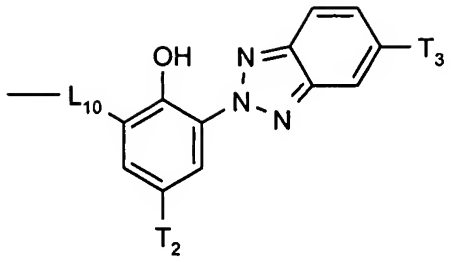
or the anchor group is C_3-C_{22}alkylene or C_3-C_{22}oxaalkylene attached with both open bonds to adjacent carbon atoms of the mono-hydroxyphenyl moiety; or

component (a) can also be a phenolic UV absorber compound selected from benzotriazoles of the formula (IIa), 2-hydroxybenzophenones of the formula (IIb)**[[,]]** and 2-hydroxyphenyltriazines of formula (IIc):



(IIa)**[[,]]**

wherein T_1 is hydrogen, C_1-C_{18}alkyl, or C_1-C_{18}alkyl which is substituted by phenyl,

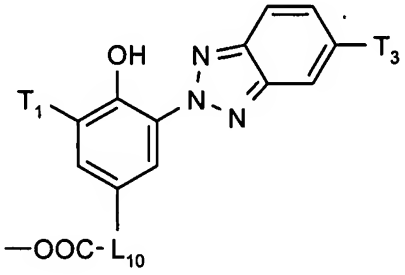
or T_1 is a group of the formula  ;

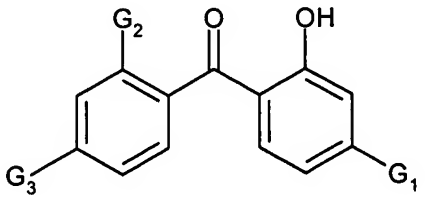
L_{10} is a divalent group[[,]]~~for example~~ $-(CH_2)_n-$, where n is from the range 1-8;

T_2 is hydrogen, C_1-C_{18}alkyl, or is C_1-C_{18}alkyl which is substituted by $COOT_5$, C_1-C_{18}alkoxy, hydroxyl, phenyl or C_2-C_{18}acyloxy;

T_3 is hydrogen, halogen, C_1-C_{18}alkyl, C_1-C_{18}alkoxy, C_2-C_{18}acyloxy, perfluoroalkyl of 1 to 12 carbon atoms~~ such as $-CF_3$~~, or T_3 is phenyl; and

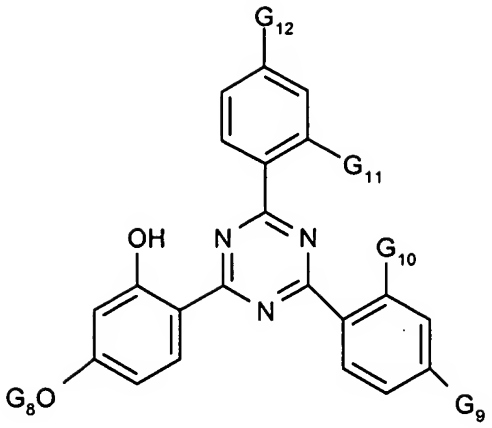
T_5 is C_1-C_{18}alkyl or C_4-C_{50}alkyl interrupted by one or more O and/or substituted by OH or by

a group  ;

 (IIb)

wherein

G_1, G_2 and G_3 independently are hydrogen, hydroxy or C_1-C_{18}alkoxy;



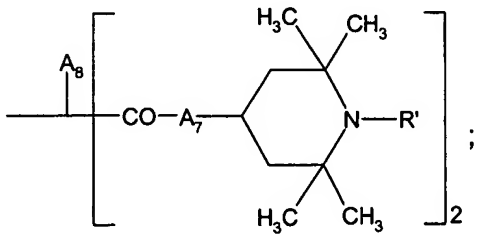
(IIc)

wherein

G_8 is C_1-C_{18}alkyl, or is C_4-C_{18}alkyl which is interrupted by COO or OCO or O, or is interrupted by O and substituted by OH; and

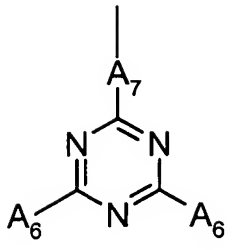
G_9, G_{10}, G_{11} and G_{12} independently are hydrogen, methyl, hydroxy or OG_8; and G_9 and G_{12} also comprise phenyl.

4. (currently amended) Method according to claim **3**, wherein the anchor groups are selected from tertiary C_4-C_{12}alkyl; C_1-C_{22}alkyl-A_5-; C_2-C_{22}alkyl interrupted by -A_5-; -A_5-phenyl; -A_5-phenyl where the phenyl core is substituted by C_1-C_{12}alkyl; and -A_4-phenyl where the phenyl core is substituted by C_2-C_{12}alkanoyloxy and/or C_3-C_{12}alkenoyloxy, and optionally further by C_1-C_{12}alkyl; or the anchor group is C_3-C_{22}alkylene or C_3-C_{22}oxaalkylene attached with both open bonds to adjacent carbon atoms of the mono-hydroxyphenyl moiety; or is a group of one the formulae



;

-A_3-$(O)_m$-$P(=O)_p(OA_1)(OA_2)$; or



;

where m and p independently are 0 or 1;

A_1 and A_2 independently are C_1-C_{12}alkyl or phenyl or phenyl substituted by C_1-C_{12}alkyl or an equivalent of an alkaline, alkaline earth or aluminum atom;

A_3 is a direct bond or C_1-C_8alkylene;

A_4 is selected from C_1-C_8alkylene, –O-, -NH-, -S-, -CO-, -COO-, -OCO-, -NHCO-**[[,]]** and -CONH-;

A_5 is selected from –O-, -NH-, -S-, -CO-, -COO-, -OCO-, -NHCO-**[[,]]** and -CONH-;

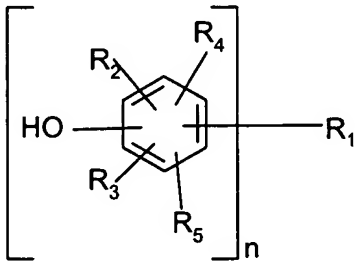
A_6 is selected from C_1-C_{18}alkoxy, C_1-C_{18}alkylthio and C_1-C_{18}alkylamino;

A_7 is -O- or –NH-;

A_8 is C_1-C_7alkyl; and

R' is C_1-C_{18}alkyl.

5. (currently amended) Method according to claim **3**, wherein component (a) is a compound of the formula (A)



(A)

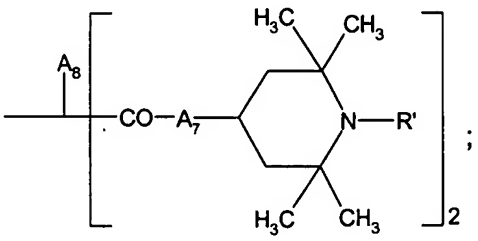
wherein

R_2, R_3, R_4 and R_5 independently are hydrogen, methyl or tertiary C_4-C_{12}alkyl**[[,]]** ~~especially methyl, tert.-butyl and tert.-pentyl~~;

n is from the range 1-4:

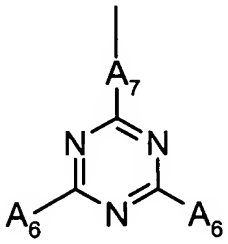
when n is 1,

R_1 is tertiary C_4-C_{12}alkyl; C_1-C_{22}alkyl-A_5-; C_2-C_{22}alkyl interrupted by -A_5-; -A_5-phenyl; -A_5-phenyl where the phenyl core is substituted by C_1-C_{12}alkyl; -A_4-phenyl where the phenyl core is substituted by C_2-C_{12}alkanoyloxy and/or C_3-C_{12}alkenoyloxy, and optionally further by C_1-C_{12}alkyl; or R_1 together with R_5 is C_3-C_{22}alkylene or C_3-C_{22}oxaalkylene attached with both open bonds to adjacent carbon atoms of the mono-hydroxyphenyl moiety; or is a group of one the formulae



;

$-A_3-(O)_m-P(=O)_p(OA_1)(OA_2)$; or



;

where m and p independently are 0 or 1;

A_1 and A_2 independently are C_1-C_{12}alkyl or phenyl or phenyl substituted by C_1-C_{12}alkyl or an equivalent of an alkaline, alkaline earth or aluminum atom;

A_3 is a direct bond or C_1-C_8alkylene;

A_4 is selected from C_1-C_8alkylene, –O-, -NH-, -S-, -CO-, -COO-, -OCO-, -NHCO-**[[,]]** and -CONH-;

A_5 is selected from –O-, -NH-, -S-, -CO-, -COO-, -OCO-, -NHCO-**[[,]]** and -CONH-;

A_6 is selected from C_1-C_{18}alkoxy, C_1-C_{18}alkylthio and C_1-C_{18}alkylamino;

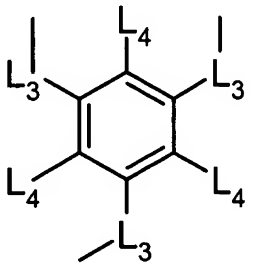
A_7 is –O- or –NH-;

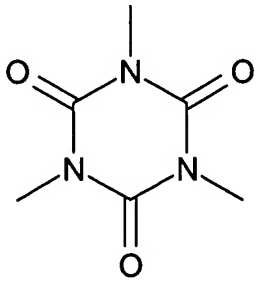
A_8 is C_1-C_7alkyl; and

R' is C_1-C_{18}alkyl;

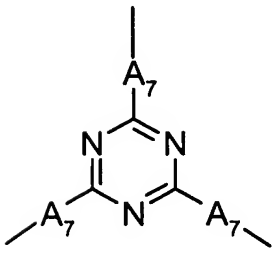
when n is 2, R_1 is C_1-C_{20}alkylene which may be interrupted and/or end-capped with -O-, -NH-, -S-, -CO-, -COO-, -OCO-, -NHCO-, -CONH-, -L_1-, phenylene, phenylene which is substituted by C_1-C_{12}alkyl and/or C_1-C_{12}alkoxy and/or C_2-C_{12}alkanoyloxy and/or C_3-C_{12}alkenoyloxy; divalent mono-, di- or tricycloalkylene groups; divalent mono-, di- or tricycloalkylene groups interrupted by -O-; ~~spacer groups~~ -O-; -NH-; -S-; -CO-; -COO-; -OCO-; -NHCO-; or -CONH-;

when n is 3, R_1 is trivalent alkyl of 3 to 20 carbon atoms; said trivalent alkyl interrupted or end-capped with -O-, -NH-, -S-, -CO-, -COO-, -OCO-, -NHCO-, -CONH-, -L_1-, phenylene**[[,]]** or phenylene which is substituted by C_1-C_{12}alkyl and/or C_1-C_{12}alkoxy and/or C_2-C_{12}alkanoyloxy and/or C_3-C_{12}alkenoyloxy; or trivalent groups of the formulae





or

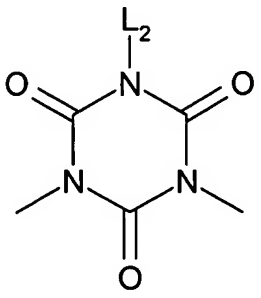


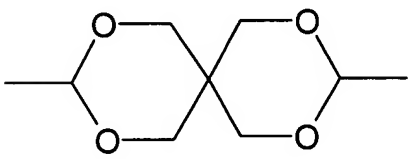
;

when n is 4, R_1 is tetravalent alkyl of 4 to 20 carbon atoms; said tetravalent alkyl interrupted or end-capped with -O-, -NH-, -S-, -CO-, -COO-, -OCO-, -NHCO-, -CONH-, -L_1-, phenylene**[[,]]** or phenylene

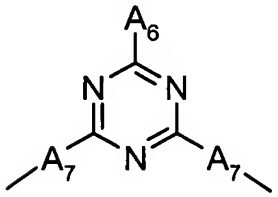
which is substituted by C_1-C_{12}alkyl and/or C_1-C_{12}alkoxy and/or C_2-C_{12}alkanoyloxy and/or C_3-C_{12}alkenoyloxy;

L_1 is a group selected from the formulae





and



;

L_2 is OH, C_1-C_{12}alkyl, C_1-C_{12}alkoxy, C_2-C_{12}hydroxyalkyl; or C_2-C_{12}hydroxyalkoxy;

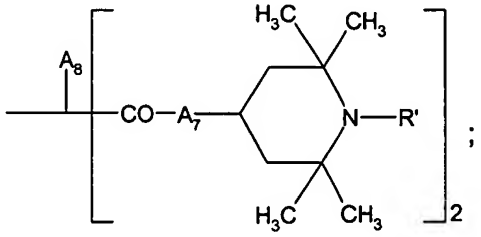
L_3 independently are C_1-C_4alkylene; and

L_4 independently are H or C_1-C_4alkyl.

6. (currently amended) Method according to claim **5**, wherein R_2, R_3, R_4 and R_5 independently are hydrogen, methyl, tert**[[.]]**-butyl**[[,]]** or tert**[[.]]**-pentyl;

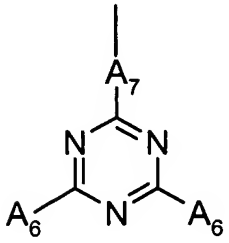
when n is 1,

R_1 is tertiary butyl, tertiary pentyl; C_1-C_{22}alkyl-A_5-; C_2-C_{22}alkyl interrupted by -A_5-; -A_5-phenyl where the phenyl core is substituted by C_1-C_{12}alkyl; -A_4-phenyl where the phenyl core is substituted by C_3-C_4alkenoyloxy and C_1-C_{12}alkyl; or R_1 together with R_5 is C_3-C_{22}alkylene or C_3-C_{22}oxaalkylene attached with both open bonds to adjacent carbon atoms of the mono-hydroxyphenyl moiety; or R_1 is a group of one the formulae



;

-A_3-P(=O)(OA_1)(OA_2); or



;

where

A_1 and A_2 independently are C_1-C_4alkyl or an equivalent of a metal atom selected from Li, Na, K, ½ Mg, ½ Ca**[[,]]** and 1/3 Al;

A_3 is methylene;

A_4 is C_1-C_8alkylene;

A_5 is selected from –O-, -S-, -COO-, -OCO-, -NHCO-**[[,]]** and -CONH-;

A_6 is selected from C_4-C_{18}alkylthio and C_4-C_{18}alkylamino;

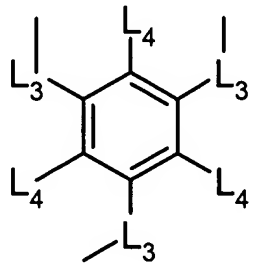
A_7 is -NH-;

A_8 is C_1-C_7alkyl; and

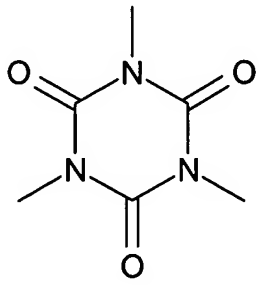
R' is C_1-C_{18}alkyl;

when n is 2, R_1 is C_1-C_{12}alkylene; C_2-C_{20}alkylene interrupted and/or end-capped with –O-, -S-, -COO-, -OCO-, -NHCO-, -CONH-**[[,]]** or -L_1-; or R_1 is a divalent mono-, di- or tricycloalkylene group; or R_1 is -O-; -NH-; or -S-;

when n is 3, R_1 is trivalent alkyl of 3 to 20 carbon atoms; said trivalent alkyl interrupted by –O-, -S-, -COO-, -OCO-, -NHCO-, -CONH-, phenylene**[[,]]** or phenylene which is substituted by C_1-C_{12}alkyl; or R_1 is a trivalent group of one of the formulae

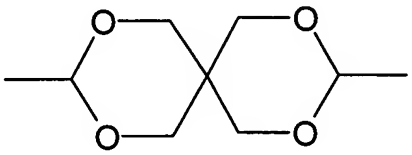


or



;

when n is 4, R_1 is tetravalent alkyl of 4 to 20 carbon atoms; or said tetravalent alkyl interrupted by -O-, -S-, -COO-, -OCO-, -NHCO-**[[,]]** or -CONH-; and

L_1 is a group of the formula  ;

L_3 independently are C_1-C_4alkylene; and

L_4 independently are H or C_1-C_4alkyl.

7. (currently amended) Method according to claim **1**, wherein the colour former is a triphenylmethane, lactone, benzoxazine, spiropyran, ~~or preferably~~ fluoran or phthalide.

8. (original) Method according to claim **1**, wherein the polymeric material contains 0.001 to 10 % by weight of the phenolic antioxidant and/or phenolic UVA, based on the total weight of the polymeric material.

9. (currently amended) Method according to claim **1**, wherein the polymeric material contains 0.001 to 10 % by weight**[[**, **]]**~~preferably 0.01 to 5 % by weight~~ of the colour former with respect to the total weight of the polymeric material.

10. (original) Method according to claim **1**, wherein the polymeric material is a transparent thermoplast.

11. (currently amended) Method according to claim **1**, wherein the polymeric material is selected from styrene acrylonitrile copolymer, polyolefin, polyvinylchloride, polychlorobutadiene, polyesters or~~and~~ glycol modified polyesters, polyacrylics, polystyrene, acrylonitrile styrene acrylate copolymer, polyamide, acrylonitrile styrene butadiene copolymer, polycarbonate**[[**,**]]** and~~or~~ blends or alloys thereof.

12. (original) Method of coloring a polymeric material, wherein a polymeric material containing

c) a phenolic antioxidant, phenolic ultraviolet absorber and/or a latent acid, and

d) a colour former

is irradiated using a radiation of higher energy than ultraviolet light.

13. (currently amended) Protective clothing or mask or irradiation indicating tag, wherein a polymeric material comprising components (c) and (d) according to claim **12** in the form of a fiber, textile, nonwoven or film is contained on or visibly below the surface of the clothing, mask or tag.

14. (currently amended) Process for monitoring irradiation by X-ray or radioactive material, which process comprises placing a tag or sample of a polymeric material comprising components (c) and (d) according to claim **12** in the site to be controlled, and subsequently checking the colour of the tag or sample.

15. (canceled)

16. (original) Process of making a fiber or woven or non-woven fabric, which process comprises adding (a) a phenolic antioxidant and/or phenolic UVA and (b) a colour former to a synthetic polymer before or during the fiber melt spinning process.

17. (new) Method according to claim **1**, wherein the radiation of higher energy than visible light is selected from ultraviolet laser or ultraviolet lamp radiation of 285 to 400 nm, electron radiation, X-ray and gamma radiation.

18. (new) Method according to claim **1**, wherein the polymeric material contains 0.01 to 5 % by weight of the colour former with respect to the total weight of the polymeric material.